

CLAIMS

What is claimed is:

1. A process for incorporating at least one guest material into an organic layer comprising placing a first liquid composition over a first portion of the organic layer, wherein the first liquid composition comprises at least a first guest material and a first liquid medium, wherein the first liquid composition comes in contact with the organic layer and a substantial amount of the first guest material migrates into the organic layer.
2. The process of claim 1, wherein the organic layer is a substantially solid layer before placing the first liquid composition over the organic layer.
3. The process of claim 1, wherein after placing the first liquid composition over the organic layer, substantially all of the first guest material migrates into the organic layer.
4. The process of claim 3, wherein the first guest material migrates into the organic layer at a temperature no higher than approximately 40°C.
5. The process of claim 1, further comprising forming the organic layer over a substrate, wherein placing the first liquid composition over the organic layer is performed without a well structure present over the substrate.
6. The process of claim 1, further comprising:  
forming the organic layer over a substrate; and  
forming a well structure over the substrate before forming the organic layer over the substrate.
7. The process of claim 1, further comprising placing a second liquid composition over a second portion of the organic layer, wherein:  
the second liquid composition comprises a second guest material and a second liquid medium; and  
the second guest material is different from the first guest material.
8. The process of claim 7, wherein the first liquid medium and the second liquid medium are a same solvent.
9. The process of claim 7, wherein, in a finished organic electronic device, a third portion of the organic layer is substantially free of the first and second guest materials.
10. The process of claim 1, wherein placing the first liquid composition over the organic layer is performed using a precision deposition technique.

11. A process for forming an organic layer comprising at least one guest material, wherein the process comprises:

placing a first guest material over a first portion of a substrate; and  
forming the organic layer over the substrate and first guest material, wherein a substantial amount of the first guest material migrates into the organic layer.

12. The process of claim 11, wherein after forming the organic layer, substantially all of the first guest material migrates into the organic layer.

13. The process of claim 14, further comprising placing a second liquid composition over a second portion of the substrate, wherein:

the second liquid composition comprises a second guest material;  
and

the second guest material is different from the first guest material.

14. The process of claim 13, wherein forming the organic layer is also formed over the second portion.

15. The process of claim 13, wherein, in a finished organic electronic device, the organic layer, which overlies a third portion of the substrate, is substantially free of the first and second guest materials.

16. An organic electronic device comprising: ✓

a substrate;

a continuous organic layer overlying the substrate, wherein the continuous organic layer comprises a first portion and a second portion;  
and

a first guest material, wherein a substantial amount of the first guest material lies within the continuous organic layer, wherein:

at least part of the first guest material lies within the first portion; and

the second portion of the continuous organic layer is substantially free of the first guest material.

17. The organic electronic device of claim 16, wherein the continuous organic layer comprises an organic active layer.

18. The organic electronic device of claim 17, wherein:  
the continuous organic layer further comprises a third portion,  
wherein the second portion lies between the first and third portions; and  
the organic electronic device comprises:

a first organic electronic component comprising the first portion of the continuous organic layer, wherein the first organic electronic

component is designed to have a first emission maximum or respond to radiation at a first wavelength; and

a second organic electronic component comprising the third portion of the continuous organic layer, wherein the second organic electronic component is designed to have a second emission maximum or respond to radiation at a second wavelength different from the first wavelength.

19. The organic electronic device of claim 18, wherein no organic electronic component comprises the second portion of the continuous organic layer.

20. The organic electronic device of claim 19, wherein the second portion of the continuous organic layer is substantially free of the first and second guest materials.

21. The organic electronic device of claim 18, wherein a well structure does not lie between the first and second organic electronic components.

22. The organic electronic device of claim 18, wherein each of the first and second organic electronic components has an efficiency of at least approximately 0.4 cd/A.

23. The organic electronic device of claim 16, wherein the continuous organic layer is at least part of a filter layer.

24. The organic electronic device of claim 23, wherein:

- the continuous organic layer further comprises a third portion, wherein the second portion lies between the first and third portions; and
- the first portion of the continuous organic layer is designed for a first wavelength or a first spectrum of wavelengths to be transmitted through the first portion; and

- the third portion of the continuous organic layer is designed for a second wavelength or a second spectrum of wavelengths to be transmitted through the third portion, wherein the second wavelength is different from the first wavelength.

25. The organic electronic device of claim 16, wherein:

- the continuous organic layer further comprises a third portion, wherein the second portion lies between the first and third portions; and
- a well structure does not lie between any of the first, second, and third portions of the continuous organic layer.

26. The organic electronic device of claim 16, wherein a first concentration of the first guest material near a first surface of the

continuous organic layer is less than an order of magnitude different from a second concentration of the first guest material near a second surface of the continuous organic layer, wherein the second surface is opposite the first surface.

27. The organic electronic device of claim 18, wherein the first guest material lies substantially completely within the continuous organic layer.

28. A process for using an organic electronic device comprising:  
providing the organic electronic device comprising:

a continuous organic layer overlying a first portion and a second portion of a substrate; and

a first guest material lying substantially completely within the continuous organic layer, wherein:

at least part of the first guest material lies within the first portion;

substantially none of the first guest material lies within the second portion of the continuous organic layer; and

a first organic electronic component within the organic electronic device comprises a first electrode, a second electrode, and the first portion of the continuous organic layer but not the second portion of the continuous organic layer;

biasing the first and second electrodes of the first organic electronic component to a first potential difference, wherein the first organic electronic component emits radiation at a first emission maximum or responds to radiation at a first wavelength; and

biasing the first and second electrodes of the first organic electronic component to a second potential difference that is significantly different from the first potential, wherein the first electronic component emits radiation substantially at the first emission maximum or responds to radiation substantially at the first wavelength.

29. The process of claim 28, wherein:

the first organic electronic component is designed to operate at no higher than a maximum operating potential difference between the first and second electrodes of the first organic electronic component; and

each of the first and second potential differences are no greater than the maximum operating potential difference.

30. The process of claim 28, wherein each of the first and second potential differences is in a range of approximately 2-5 volts.

31. The process of claim 28, wherein the organic electronic device further comprises a second organic electronic component within the organic electronic device, wherein the second organic electronic component comprises a first electrode, a second electrode, and a second portion of the continuous organic layer, wherein the second portion of the continuous organic layer is substantially free of the first guest material.

32. The process of claim 31, further comprising:

biasing the first and second electrodes of the second organic electronic component to a third potential difference, wherein the second electronic component emits radiation at a second emission maximum or responds to radiation at a second wavelength; and

biasing the first and second electrodes of the second organic electronic component to a fourth potential difference that is different from the third potential difference, wherein the second electronic component emits radiation substantially at the second emission maximum or responds to radiation substantially at the second wavelength.